UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/068,615	02/05/2002	Markus Naf	SCHSM-010XX	6803

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EXAMINER
LAROSE, COLIN M

ART UNIT	PAPER NUMBER
2623	

DATE MAILED: 12/21/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☐ Responsive to communication(s) filed on _____.

2a) ☐ This action is **FINAL**.   2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
   closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) _1-18_ is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) _1-18_ is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☒ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☒ All   b)☐ Some *   c)☐ None of:

      1.☒ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
        application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _0502_.

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

DETAILED ACTION

Specification

1.   The disclosure is objected to because it contains an embedded hyperlink and/or other

form of browser-executable code. Applicant is required to delete the embedded hyperlink and/or

other form of browser-executable code. See MPEP § 608.01.

Claim Objections

2.   The following sections of 37 CFR §1.75(a) and (d)(1) are the basis of the following

objection:

> (a)   The specification must conclude with a claim particularly pointing out
> and distinctly claiming the subject matter which the applicant regards as his
> invention or discovery.

> (d)(1)   The claim or claims must conform to the invention as set forth in
> the remainder of the specification and the terms and phrases used in the
> claims must find clear support or antecedent basis in the description so
> that the meaning of the terms in the claims may be ascertainable by
> reference to the description.

3.   Claims 1, 2, 12, 13, 15, and 16 are objected to under 37 CFR §1.75(a) and (d)(1) as

failing to particularly point out and distinctly claim the subject matter that the applicant regards

as the invention.

4.   Claim 1 is objected to because it is unclear whether the limitations that follow

"preferably" are required. The claim should either be rewritten to positively claim these

limitations, or these limitations should be removed.

Claim 2 is objected to because it appears "patent area" should be "pattern area."

Correction is required.

Claim 12 is objected to for containing the indefinite language "or the like." This language should be removed since it is indefinite and adds no substance to the claim.

Claim 13 is objected to because there is no antecedent basis for "the colour space."

Claims 15 and 16 are objected to because there is no antecedent basis for "the assigned distribution" in claim 15 and "said distribution(s)" in claim 16. For examination purposes, these claims are presumed to depend from claim 13 instead of claim 6. Appropriate correction is required.

Claim 15 is also objected to because it is not clear to what "the matching" refers.

5.   The claims appear to be a literal translation into English from a foreign document and are replete with grammatical and idiomatic errors. Review and correction of all grammatical and idiomatic errors is required.

Claim Rejections - 35 USC § 102

6.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7.   Claims 1-4, 6-9, 17, and 18 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent 5,296,945 by Nishikawa et al. ("Nishikawa").

Regarding claim 1, Nishikawa discloses a method (see figure 2) for correcting at least one colour (i.e. skin color of a face) of a photographic image including at least one pattern area

or image pattern with a predictably known colour (memory colour), said image being transferred

to a digital representation, the method comprising the following steps:

a) said at least one pattern area or image pattern is being detected with respect to its

presence and its location, and preferably also with respect to its dimensions (figure 6: the

location and size of a face pattern is detected via the detection point setting unit 52);

b) an existing colour in the at least one detected pattern area or image pattern being

determined (i.e. the skin colors in the face are determined by the detection point setting unit 52

and stored in the detected complexion memory 54);

c) providing at least one replacement colour value (memory colour) being related to the

respective at least one pattern area or image pattern (predetermined desired skin colors are stored

in the standard color memory 56);

d) replacing said determined existing colour by said at least one replacement colour

value, to correct the colour in the image pattern or image area (the look-up table 60 is used to

replace the existing skin color(s) with the desired skin colors stored in the standard color

memory 56 in order to correct the complexion of the face image).

Regarding claim 2, Nishikawa discloses a deviation between the at least one

replacement colour value (memory colour) and said existing colour being determined, and

modifying existing colour values in the detected pattern [patent] area or image pattern on the

basis of the deviation (comparator 58 compares the existing color and the replacement color,

and the existing color is modified via the look-up table 60 based on the comparison).

Regarding claim 3, Nishikawa discloses in particular all existing colours of

the image are modified on the basis of the deviation (i.e. all existing skin colors are subject to the modification by the look-up table).

Regarding claim 4, Nishikawa discloses an average colour value and/or mean colour value of the colour values in the at least one detected image pattern or pattern area is determined to be used as the existing colour (column 6, lines 60-63: average complexion data is extracted as existing color).

Regarding claim 6, Nishikawa discloses a transform is being provided for transforming existing colour values on the basis of the matching replacement colour value (look-up table 60 transforms the existing colors of the skin area into the replacement skin colors).

Regarding claim 7, Nishikawa discloses the colour correction is repeatedly conducted, using the modified existing colour values as the existing colour values (i.e. the color correction is repeatedly carried out for the entire skin area, and then the modified existing colors become the new existing colors of the image).

Regarding claim 8, Nishikawa discloses a basic pattern of a recordable object is stored to be detected in the digital representation of the photographic image to detect the location of the pattern area or image pattern (i.e. a recordable face image is stored in digital form in order to detect the location of the skin areas by the detection point setting unit 52).

Regarding claim 9, Nishikawa discloses the pattern area represents a human face and wherein accordingly also the basic pattern represents a human face (i.e. the pattern are of the image is a face pattern representative of a human face pattern).

Regarding claim 17, Nishikawa discloses the transform is determined to include a colour appearance transform, said colour appearance transform modelling the appearance of the colour

values of the image data additionally by a human being, who perceives the corrected image data

(i.e. the look-up table transforms the image into a color(s) that renders the appearance of the

skin region visually pleasing to a human observer).

Regarding claim 18, Nishikawa discloses an image processing device (figure 2) for

processing image data, including:

a) an image data input section (26),

b) an image data processing section (52-60),

c) an image data recording section (30) for recording image data, wherein the image data

processing section is embodied to implement a method according to claim 1.

Claim Rejections - 35 USC § 103

8.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
> manner in which the invention was made.

9.   This application currently names joint inventors. In considering patentability of the

claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various

claims was commonly owned at the time any inventions covered therein were made absent any

evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out

the inventor and invention dates of each claim that was not commonly owned at the time a later

invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

10.   Claims 5, 10-13, 15, and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nishikawa in view of U.S. Patent 6,678,407 by Tajima.

Regarding claim 5, Nishikawa is silent to the replacement colour value being determined on the basis of at least one distribution of colour values related to the respective at least one pattern area or image pattern, wherein a matching replacement colour value is assigned to the determined existing colour(s), as claimed.

Tajima discloses a system (figure 9), wherein the skin colors of a detected face are corrected (7) using a table (6) of predetermined colors. Tajima determines the type of light source used to illuminate the image at block 100, and uses this information to help determine the replacement color. Figure 2 shows a detailed view of the light source discrimination device 100. The device stores at least one distribution of reference colors, which are related to the image pattern and which help determine the replacement color.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Nishikawa by Tajima to determine the replacement color on the basis of distribution(s) of color values since Tajima discloses that it is advantageous to consider the type light source when determining the reference color by which to correct the skin color, and it is expedient to rely on color distributions to determine the type of light source.

Regarding claim 10, Tajima discloses a colour distribution is used derived from one of said pattern area with the predictably known colour and/or predictably known colour distribution

(both memory colour representations) (i.e. Tajima's reference color distribution storage section 4 is derived from predictably known light source images).

Regarding claim 11, Tajima discloses several distributions are provided and one distribution is selected which is deemed to match with the determined predictably known colour (see column 9, line 60 through column 10, line 27) .

Regarding claim 12, Tajima discloses additional recording information is provided, providing data about light conditions (block 100, figure 9).

Regarding claim 13, Nishikawa is silent to claimed the steps of providing, assigning, and determining.

Tajima discloses a system (figure 9), wherein the skin colors of a detected face are corrected (7) using a table (6) of predetermined colors. Tajima determines the type of light source used to illuminate the image at block 100, and uses this information to help determine the replacement color. Figure 2 shows a detailed view of the light source discrimination device 100. The device stores at least one distribution of reference colors, which are related to the image pattern and which help determine the replacement color.

The method associated with Tajima's system involves:

a) providing at least one set of distributions of colour values (memory colours) in the colour space (distribution storage 4, figure 2),

b) assigning one of said set of distributions to each of the at least one pattern areas (column 8, lines 36-41: the closest distribution is assigned to the skin area);

c) determine the transformation of transforming the at least one colour value of the at least one pattern area or image pattern such that the transformed colour value matches to the

assigned distribution or distributions (figure 3 shows that the transformation of the skin color values in the skin area is transformed such that the transformed color value matches to (i.e. corresponds to) the distribution associated with ascertained light source, such as daylight, fluorescent light, etc. – see column 10, lines 40-59).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Nishikawa by Tajima to include the claimed steps in Nishikawa's skin-color correction method, since Tajima teaches that providing a set of distributions of color values corresponding to different light sources, assigning one of the distributions to the skin area to designate a light source, and then transforming the skin colors in accordance with the designated light source (and the matching distribution), facilitates skin-color correction in that the effects of different light sources are accounted for in the skin color correction process.

Regarding claim 15, Tajima discloses the matching is performed in accordance with an optimisation process which evaluated a total matching degree between the transformed colour values and the colour values of the assigned distribution for each pattern area and which determines the transformation such that a function is optimised, said function mathematically combine single matching degrees for each pattern area and its assigned distribution (column 8, lines 30-55, and column 10, lines 28-59: the degree of match between each of the stored distributions and the image color values is determined, and the optimal distribution is selected; the selected distribution determines the type of light source, which information is utilized to help optimize the skin-color correction process to account for differences in illumination; Tajima considers only one pattern area (the face area), so there is no need to combine the matching degrees of several pattern areas).

Regarding claim 16, Tajima discloses said distribution(s) define a probability of colour values to represent a replacement colour and wherein said matching degree is determined based on said probability (column 8, line 57 through column 9, line 13: the stored distributions are given by their probabilities of representing the actual light source utilized and therefore also represent the probability of replacement colors associated with each type of light source being utilized).

11.   Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nishikawa in view of U.S. Patent 5,539,523 by Nakai et al. ("Nakai").

Regarding claim 14, Nishikawa does not disclose said method being iteratively conducted on the basis of a respectively last colour corrected digital representation of a photographic image.

Nakai discloses a system (figure 13) for correcting specific colors in an image, such as skin colors. In particular, Nakai discloses performing a color correction operation (54) prior to the specific color correction processing.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Nishikawa by Nakai to iteratively conduct the skin-color correction processing on image data that has been color-corrected, since Nakai teaches that it is advantageous to color-correct an image to remove errors introduced by a sensor array and uneven lighting prior to skin color correction (see column 13, lines 1-13).

Conclusion

12.   The prior art made of record and not relied upon is considered pertinent to applicant's

disclosure.

U.S. Patent 5,384,601 by Yamashita et al.

U.S. Patent 5,130,935 by Takiguchi

U.S. Patent 6,396,599 by Patton et al.

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Colin M. LaRose whose telephone number is (703) 306-3489. If

attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amelia

Au, can be reached on (703) 308-6604. The fax phone number for the organization where this

application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding

should be directed to the TC 2600 Customer Service Office whose telephone number is (703)

306-0377.

VIKRAM BALI
PRIMARY EXAMINER

CML
Group Art Unit 2623
15 December 2004